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Traces the history of the university, sets forth the qualities of great universities of the past, and summarizes growth patterns of universities in the United States. In a discussion of some of the specifics of campus planning, the author stresses the requirement for *continuous academic and physical planning*. He refers to the comprehensive planning undertaken by the University of California as an illustration of the wide range of problems encountered in campus planning. He also discusses the plan prepared by the City of San Diego for the development of a new "University Community." This plan provides for major changes in the road and freeway network, the establishment of a convenient town center, a wide variety of housing types to accommodate the needs characteristic of a university, recreational facilities, and compatible industrial research and development plants.

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XV. Campus Planning

. . . . . Robert J. Evans

As a prelude to more specific remarks, I would like to review for a few minutes the nature of a university and explore the lessons that history can teach us. For this I am drawing heavily on research undertaken by us with our Planning Consultants, Pereira and Luckman, during a recent study for the selection of sites for new campuses.

History of the University

The idea or concept of a "university" is one of the greatest inventions of Western culture and one of the most diffuse--a community of learned men and a body of scholarly aspirants, linked to society at large by bonds that are highly valued but rarely defined. The university has led the thoughts and philosophies of its time. It has advanced new ideas of men through pure research, and has served as a sanctuary for thoughts and words of the best thinkers and intellects that history provided, regardless of language or race.

Cardinal Newman, writing in 1856, supplied this eloquent answer to the question, "What is a university?":

> If we would know what a university is, considered in its elementary idea, we must betake ourselves to the first and most celebrated home of European literature and source of European civilization, to the bright and beautiful Athens--Athens, whose schools drew to her bosom and then sent back to the business of life, the youth of the Western World for a long thousand years.
>
> Hither, then, as to a sort of idea land, where all archetypes of the great and fair were found in substantial being, and all departments of truth explored, majestically enthroned as in a royal court, where there was no sovereignty but that of mind, and no nobility but that of genius, where professors were rulers and princes did homage, hither flocked continually from the very corners of the orbis terrarum, the many-tongued generation, just rising, or just risen into manhood, to gain wisdom.

Although it was conceived in Athens, the "university" as we know it originated in medieval times in Europe as a guild or corporation of

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teachers and scholars, banded together for security and protection against interference from political, ecclesiastical or civil authorities. It was not designed as a means of popular education but was for the training of clerics, statesmen, doctors of law and medicine. A degree was simply a license to teach. The Universities of Paris, Bologna and Oxford arose spontaneously in the course of the 12th and 13th centuries in locations where there were existing religious schools or other traditional centers of instruction.

For a long time those early Universities possessed no buildings of their own. Congregations or great public gatherings were held in a church or public building that was borrowed or rented.

Finally, toward the end of the 15th century, there began a movement toward the establishment of the true university in which all faculties were located together in a single building. At that time, particularly in Italy, the university was beginning to be looked upon as a state institution. Thus in 1492 at Pisa we find the corn exchange being turned into a great university building by Lorenzo de Medici.

Originally the students lived where they pleased, and the undisciplined swarm of rowdy and irresponsible youths from 14 upwards frequently caused trouble for city authorities. Some took common-houses which one of them managed for the rest. Still later, wealthy patrons began to endow hostels called "colleges" for poor deserving scholars (the birth of the Sorbonne).

Teachers who up to that time had been unpaid (except for a "collecta" contributed by the students) and who had no fixed place to live or lecture, now began to use the colleges for both purposes. Faculties became permanent groups, and something more like the residential college system, which still exists today at Oxford and Cambridge, came into being.

Another way in which universities developed during the Middle Ages was by migration of students from one seat of learning to another. Cambridge appeared as a result of migration from Oxford in 1209. The great University of Padua (1222) was started by an exodus of dissatisfied students from Bologna, unhappy with their treatment at the hands of the city government. (Bologna could well afford the loss, since it is said to have had 10,000 students at one time.) Students from Padua were, in turn, persuaded to migrate and establish a new university at Vercelli, where the community was more accommodating and offered houses, books, copyists, provisions, salaries for professors, and a promotional program.

After the first universities had been established the most common way in which new universities came into being was by deliberate foundation, the motives being various: to combat heresy; to increase national, political or personal prestige; to encourage local prosperity.

The American college dates back to colonial times, the earliest being Harvard in 1636, endowed by John Harvard as a center for training future clergymen "dreading to leave an illiterate ministry to the church when our ministers shall lie in their graves."

While nine similar institutions were founded prior to 1776--all but one by religious denominations--others were soon founded by whole communities, or by farsighted philanthropic individuals. The writings of Jefferson, Madison and Daniel Webster are full of demands for the rapid extension of free public education, from the elementary school to the university, in line with their feelings that democracy could not survive unless its electorate had a maximum of educational opportunity. Thomas Jefferson sponsored the foundation of the University of Virginia (1819) as a token of his faith.

After the Revolutionary War some American colleges assumed the role of universities combining "schools of liberal arts and sciences, professional schools, and graduate schools providing programs for study and research beyond the level of Bachelor's and first professional degrees."

With the establishment of state universities and especially with the coming of the land grant colleges, public support and public control began to play an increasingly important role in American higher education. You are all fully aware of the more contemporary developments: higher proportion of students; longer and higher education; the melding of traditional disciplines; and the evolution of a new profession, research.

The university of today seems to be completely illogical--inexplicably, inextricably intertwingled--defying the organization chart. How then can we be expected to do a logical and efficient physical plan?

The answer may be that we cannot, in precise terms. Or it may be that in some instances the physical plan must be the leader, providing creatively and imaginatively for the possibility of things yet to come--yet unknown.

Qualities of Great Universities in the Past

To aid us in our future planning we must recognize those elements that were shared by the great universities in the past.

1. Greatness of a university depended first and foremost on its teachers. There never has been a truly great university without men of high intellect and wisdom among its faculty.

2. Gifted students were an essential component. However, it should be noted that they were naturally attracted by a strong faculty. It appears further evident that these qualities fed on themselves;

once having gained a reputation, the institution became a magnet, attracting other gifted scholars and students.

3. Urban Environment

All through history it has been in the cities that great universities have arisen or, conversely, cities have arisen around great universities. The traditions and atmosphere of one enriched the other and eventually they became bound together.

4. Internationality

As it was at Athens, students and teachers from many nations seemed to be a common bond among great universities.

5. Residency

Another characteristic shared by the great universities was that their students lived as closely as possible to the campus, to the faculty, and to one another. The students who attended universities in Europe and the New World lived in residence halls, or colleges, took lodgings in the city or lived within easy distance of the intellectual and social and recreational centers of both the city and the university. Undoubtedly, living within a university community enriched a student's life and accelerated the educational process.

Growth Patterns of Universities

One other element that should be observed from history in order to guide our future thinking, is the pattern of growth of universities.

Most universities found through the passage of time that their original sites were too small. From the beginning of the 19th century on--with almost no let up--the violent expansion of both universities and cities used up all the lands adjacent to the university core. The university became overcrowded and cramped. Industrialization caused unfavorable changes in the character of the surroundings.

In coping with these problems, the universities' methods followed one of several distinct patterns.

1. New buildings were spread throughout the city (Yale).

2. Some function or branch was moved to another site or city (Duke, Michigan).

3. The whole university was moved to another site (University of Mexico, University of Rome). Unfortunately, in some such cases the university was merely dumped on the outskirts of the town and allowed to be surrounded again by an arbitrary mixture of multiple land uses (Glasgow).

4. Vertical Expansion was achieved. Where advantages of remaining within the city outweighed the need for additional space, vertical expansion resulted (Pittsburg).

5. The existing site was expanded by acquisition or condemnation of other land adjacent to original site (Wayne, U. C., Berkeley).

6. Limitation of Enrollment. A few private colleges, such as Amherst, have been able to control their physical growth by limiting enrollments; such an option is generally not available to publicly-supported institutions.

A striking exception to the growth pattern is here around us--Stanford. While I am certain there have been times in the past when the University staff cursed their heritage, feeling frustrated or isolated, the great wisdom and farsightedness of Leland Stanford in bequeathing 9000 acres "never to be sold" is proving a God-send. Today Stanford is able to accommodate the contemporary University, including massive nuclear research facilities and to permit selective intrusion of compatible industry and health science facilities that would otherwise have been impossible.

From the review of history, it is obvious that we are working with nothing new. The problems we face, those of constant change in both size and complexity, are of our own making; they are the product of the university itself, of our national educational policies and of the accelerating rate of growth in all fields of knowledge. This necessity for growth was perhaps best expressed by our past President Robert Gordon Sproul at Berkeley's Commencement in 1957:

> Implicit in the very nature of universities is the belief that the past is a guide but not a commandment, that the present is a plateau and not a mountain top, and that the future belongs only to individuals, institutions and societies that have in them the capacity to grow... This is the law of life as I see it. The future belongs not to the rigid absolutes, whether these be primary rocks or unyielding social arrangements, but to things that can grow.
>
> Here lies the reason why universities which are rooted in the principle of growth and peculiarly adaptable to new concepts have been for centuries the flower of every civilization, and are still the best hope of mankind.
>
> Imbedded in no system of regimented axioms, their conviction is that the thrust of events is steadily forward, and that frontiers are never stationary.

Certainly one feeling a person gets from reviewing the history and the nature of the university is: "Why don't we build some temporary shacks that we can tear down or abandon to accommodate the inevitable change? Let's save the money and not worry about the future."

Personally, I can't be that much of a defeatist! In today's world the other end of the log is not an adequate laboratory for learning and there are neither sufficient teachers nor logs to do the job. I believe we have an obligation to create an environment that is dignified, enduring and beautiful--a place that will foster and inspire intellectual and social contact, preserve tradition, and develop the prestige the institution warrants. Such an environment cannot be accomplished with "temporary" buildings and a "live for today!" attitude.

One cannot deny that environment has a strong but subtle influence on the development of character. As Winston Churchill once said "We shape our cities and then our cities shape us."

Campus Planning

Adequate physical facilities and careful planning of each campus are essential to the realization of the academic program. If physical planning does not keep pace with academic planning, inefficiency, dissatisfaction and frustration will result. It is not uncommon to find that creative and imaginative physical planning will stimulate coordinated academic planning. Obviously, with such a fluid program as is characteristic of a university, not one plan but continuous academic and physical planning is required.

I will use the University of California as a case for discussion not only because I am most familiar with it, but because it possesses a wide range of the types of problems usually encountered.

The problem most of you face is undoubtedly that of redevelopment; trying to expand and alter existing facilities to meet the requirements of today and anticipate those of tomorrow. The Berkeley campus has had this problem many times.

The site was chosen in 1858 "because of the abundant water supply, the absence of severe winds, the rolling landscape, a superb view toward the Golden Gate and the rather convenient but not pressing proximity of Oakland and San Francisco--and the fact that 140 acres of land could be acquired immediately."

The development of the campus through the years was guided by many great plans: the Frederick Law Olmstead Plan in 1866; the David Farquahrson Benard Plan in 1898 which resulted from the Hearst International Architectural Competition; the John Galen Howard Plan in 1908; and the Arthur Brown, Jr. Plan in 1944.

Post-war enrollments and newly emerging educational patterns made it apparent in 1944-45 that we were developing "plans" without being truly planned. There was no internal mechanism for establishing policies; academic programs were not geared to the future, and we had no standards by which we could measure our efficiency of utilization or our needs for space.

We inaugurated a program of comprehensive planning with participation by faculty, administration and professional staff. The resulting report, in December 1951, established a new guide for the growth of the campus to 20,000 students and created a long-range land acquisition program necessary to implement the plan. This comprehensive planning approach has been refined and effectively continued to newer and greater horizons.

The Los Angeles campus illustrates some of the problems inherent in a very rapid growth situation. Several types of plans have been used there in response to rapidly changing needs and policies. In contrast to the Berkeley campus which developed slowly, and at a time in which the surrounding community changed from large single-family dwellings to boarding houses, to apartment houses, to such deterioration that redevelopment was feasible, the Los Angeles campus is ringed by high quality residential facilities, making expansion of site impractical.

Lack of nearby housing facilities for students, faculty and staff and lack of adequate public transit systems produced undesirable "day school" patterns and almost inconceivable traffic and parking problems. These are currently being overcome by provision for student housing on campus and a bold attack on the circulation and parking problems.

Our Davis campus, founded in 1908 as a branch of the College of Agriculture, is now destined to be a full general campus of 10,000 students. Despite its 3000-acre campus, the problems of redevelopment to accommodate its new mission are enormous. The academic core of the campus is established immediately adjacent to the City of Davis, thus making uniform centrifugal expansion impractical. Some major surgery will be necessary in order to re-establish academic relationships within the ten-minute class change period.

Our Medical Center in San Francisco provides teaching facilities for medicine, pharmacy, dentistry and nursing and vast research facilities in all of the Health Sciences. The site on the steep slopes of Mount Sutro is limited and congested. Redevelopment to meet the ever growing and changing demands poses unique and complex problems. Progress to date reminds one of the story of the church in need of a new and larger building. The governing board resolved that the new church should be built on the site of the old one; that it should be built out of the materials of the old church; and further, that services would be continued in the old church until the new one was completed.

The growth and development of the campuses at Mt. Hamilton, Santa Barbara, Riverside and La Jolla further illustrate the wide variety of problems inherent in expansion and redevelopment.

New Campuses

Ultimately, growth requirements cannot be met by expansion of existing campuses. (The "elastic limit" is an excellent subject for self-study and institutional research.)

A 1956 "Study of Need for Additional Centers of Public Higher Education in California" led to the determination to establish three new campuses of the University. For each campus, the 1970 enrollment demand was forecast, and the general location in the State was established.

What a tremendous challenge! What kind of site do we need? How big? Where? How do we head off the pitfalls observed from past experience? How can we prevent an expedient or political determination? While the problem was unique to us, it became clear that its solution could be achieved in essentially the same way we acquire new buildings:

(a) A program of requirements had to be established; (b) a professional architect-planner was retained to explore and evaluate the possible solutions; (c) a comprehensive and factual analysis of each prospective site was undertaken to eliminate as far as practicable the hazard of a purely expedient or political determination.

The programming effort resulted in the "Criteria for the Selection of New Campus Sites for the University of California." I will not go into it other than to say that it establishes the physical requirements, touches upon the emotional or aesthetic desiderata, and discusses the human interaction potential in a University community.

Consultants retained for the site studies were Pereira and Luckman for Southern California and Livingston and Warnecke for Northern California. These firms contributed additional research to enlarge upon and clarify the "Criteria," in the following areas: "The history of university growth patterns" (as previously presented), "Student employment patterns and requirements," "The effect of proximity to other institutions of higher learning" and "Methods of controlling land uses and development standards adjacent to a campus."

The results of our site selection efforts to date have been more than gratifying. The demanding requirements and the creative and visionary approach have been infectious to the point that they have brought forth the creation of plans for entirely new cities centered around the University of the Future.

For instance, a plan and report has been prepared by the City of San Diego for the development of a new University Community. The plan provides for major changes in the road and freeway network, the

establishment of a convenient town center, a wide variety of housing types to accommodate the needs characteristic of a university, recreational facilities and compatible industrial research and development plants.

This represents the first time to my knowledge that collaborative planning, arts, skills, science and effort have been directed towards the location of a new university campus. It has been a rewarding experience to date, and we can only pray that we have laid the foundation for a successful, modern University City. One thing is sure--to quote John Galen Howard upon completion of his Berkeley Plan--"Future generations will consider themselves bound by our preparations to the extent, and only to the extent, that we have foreseen their needs and have planned wisely for them."